7-2

Density: Review Density Asphalt Nuclear QA

Objectives

Asphalt Nuclear QA Densities Overview

Familiarization with data entry and display windows

Enter an Asphalt Nuclear QA Test Section

Retrieve / Review an Existing QA Asphalt Nuclear Test Section

Edit an Existing Asphalt Nuclear QA Test Section

Delete an Existing QC Asphalt Nuclear Lot Test Section

About QA Asphalt Nuclear Density

In the process of placing asphalt at a job site, it is the RE's on-site personnel's responsibility to perform QA according to the state's HMA/QMS QA/QC program. One of these responsibilities involves performing nuclear density tests on asphalt placed either in the same locations where the contractor's personnel have performed QC tests or at specified random locations (for verification tests) in the test section. The results of these tests are recorded by the RE's personnel on an M&T 515QA form and provided to the RE's office personnel for record keeping.

This portion of the densities module will provide that same functionality in HiCAMS. The RE office personnel will take the test results from the M&T 515QA form and enter them into the window provided (see below for screen shot and field descriptions). HiCAMS will then calculate the number of QA tests in relation to the number QC tests and the number of QA verification tests. These numbers will be available for a user to ensure that adequate testing is being performed according to the HMA/QMS guidelines.

Overview

The QA Asphalt Nuclear Density module of HiCAMS provides tracking and logging of QA asphalt nuclear density test results in a centralized location. It also assists the RE office personnel with ensuring that an adequate number of QA tests have been performed in relation to the number of QC tests and the number of QA verification tests. This functionality includes, but is not limited to:

- Logging of all asphalt nuclear QA density test results for a project
- Calculating the ratio of QA tests to QC tests
- Calculating the ratio of QA tests to QA verification tests

Authorized Users

The staff members who will have the ability to create, verify and update Asphalt Nuclear QA Density records are:

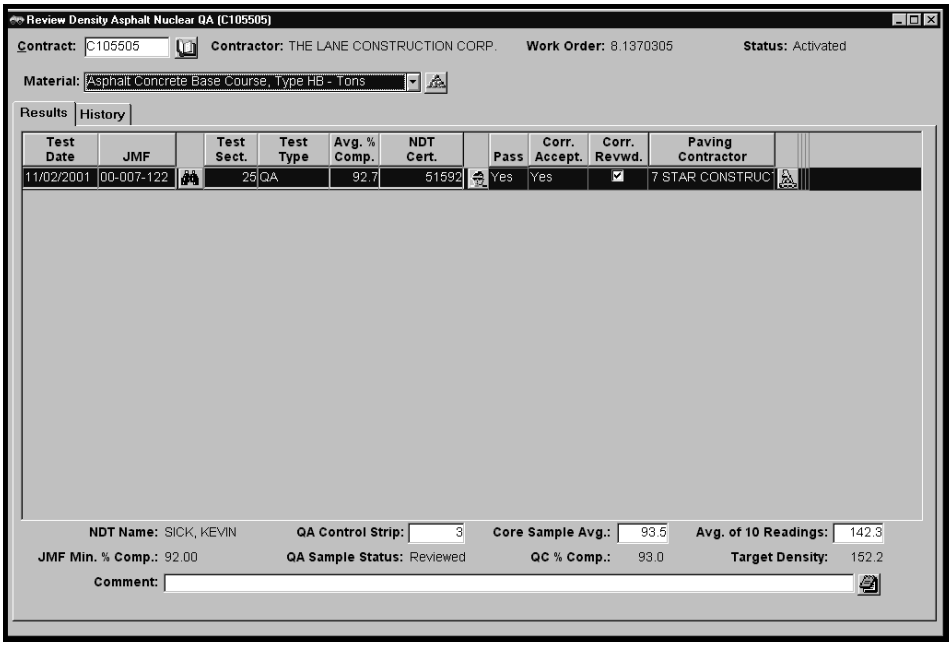
- RE Office Personnel

The staff members who will have the ability to view QA Asphalt Nuclear Density records are:

- All staff

Window Descriptions

This is the window used for entering and reviewing Asphalt Nuclear QA density data:



Review Density Asphalt QA Nuclear (Header and Results Tab)

Fields

- **Contract:** The HiCAMS contract number. Entered by user or selected from the Contract Selection window when the selection icon is clicked. REQUIRED.
- **Contractor:** Contractor firm name for the selected contract. Provided by HiCAMS.

- **Work Order:** The primary work order number for the selected contract number. Provided by HiCAMS.
- **Material:** Drop down list. Only those materials listed on the current CBOM will be listed.
- **Test Date:** The date test was initiated.
- **JMF:** The Job Mix Formula number for the material tested. Entered by user or selected from the JMF Selection window when the selection icon is clicked. When the JMF is entered, the **JMF Min. % Comp.** field will be populated at the bottom of the window. REQUIRED.
- **Test Section:** The test section number where the tests were performed. REQUIRED.
- **Test Type:** The type of test for this test section: QA (QA Nuclear Test Section) or QAV (QA Nuclear Verification Test Section). REQUIRED.
- **NDT Certification:** The nuclear density technician's HiCAMS certification number. If this number is not known, the user can click on the staff icon and select a Technician by name through the Technician Selection Window. When the number is entered, the NDT Name field is populated at the bottom of the window. REQUIRED.

Note: *A "generic" technician has been provided for selection in the event that the actual technician performing the test does not possess a valid certification. A comment is required when this technician is selected, and a notification is sent to the Pavement Construction Section.*

- **Pass:** This field will be populated by HiCAMS based upon the minimum percent compaction of the JMF selected.
- **Corr. Accept.:** This field will be populated by HiCAMS at the time the record is saved if a matching QC test section is found, *AND if the QC % Compaction falls within 2% (+/-) of the QA % Compaction*. If the correlation falls within this parameter, the field will be populated with "Yes". If it fails to fall within this parameter, the filed will display "No". If none found, will remain blank.

Note: *If a QA/QC correlation fails, a notification will be sent to the appropriate RE and the QA Supervisor.*

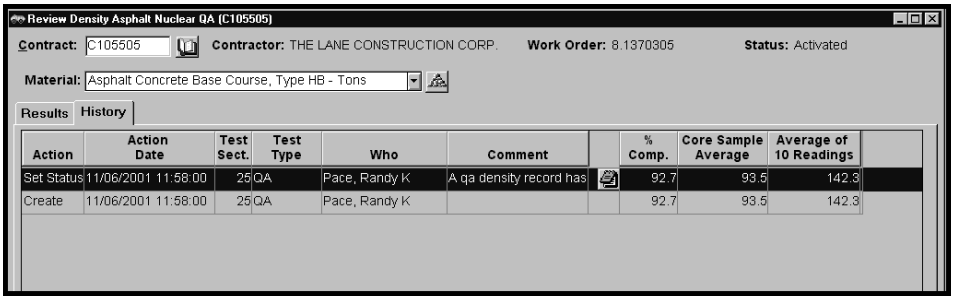
- **Corr. Revwd.:** If a correlation is found at the time the test section entered is saved, HiCAMS will check this field. However, the checkbox will remain editable.

Note: *If a matching QC test section cannot be found at the time the QA test section is entered, HiCAMs will perform regular checks for the missing QC data; when found the record will be updated, but the* ***Corr. Revwd.*** *checkbox will have to be manually checked.*

- **Paving Contractor**: The contractor being used on the project.
- **QA Control Strip:** Related control strip number for the test.
- **Core Sample Avg.:** Enter the core sample average.
- **Avg. of 10 Readings:** Enter the average.
- **JMF Min. % Comp.:** This field is populated by HiCAMS when the JMF is entered and the test section saved.
- **QA Sample Status:** This field is populated by HiCAMS when the Corr. Revwd. checkbox is checked, either by HiCAMS (when a matching QC test section is found, or manually by a user).
- **QC % Comp.:** This field is populated by HiCAMS when the matching QC test section is found.
- **Target Density:** This field calculated by HiCAMS using the results of the Core Sample Average and Average of Control Strip fields.
- **Comment:** Enter a comment for the test section.

Retrieve/Review Density Asphalt QA Nuclear (History Tab Navigation)

This is a portion of the window used for reviewing Asphalt Nuclear QA density history data:



Review Density Asphalt QA Nuclear (History Tab)

Fields

- **Action:** Indicates the action taken that caused the entry into the history:
  - *Comment* – A comment was added to an existing sample
  - *Create* – A new sample was entered
  - *Modify*– Data for an existing sample was modified
  - *Delete* - A sample was deleted
  - *Set Status* – A matching QC test was found and the QA test was updated indicating the correlation was made.
- **Action Date:** This is the date the action was performed in HiCAMS.
- **Test Section:** Displays the test section number if one or more of the following are changed: test section number, test section type, station, or compaction %.
- **Test Type:** Displays the test section type if one or more of the following are changed: test section number, test section type, station, or compaction %.
- **Who:** The full name of the person performing the action.

- **Comment:** The comment associated to the selected history record.
- **% Comp.**: The % compaction for the test section. This is displayed for each section for comparison purposes should the field be changed.
- **Core Sample Average:** The Core Sample Average for the test section. This is displayed for each section for comparison purposes should the field be changed.
- **Average of 10 Readings:** The Average for the test section. This is displayed for each section for comparison purposes should the field be changed.

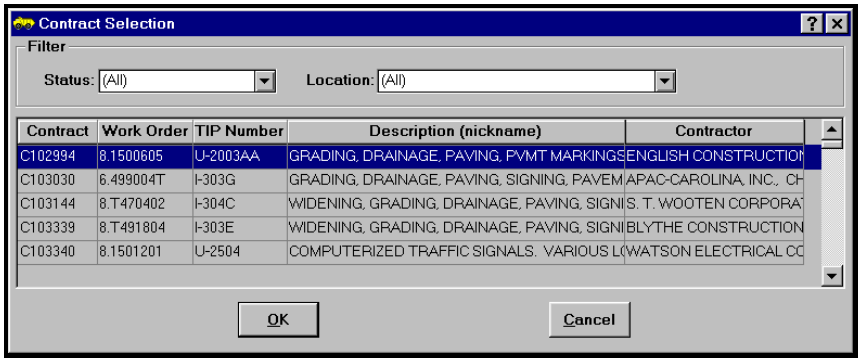
Enter an Asphalt Nuclear QC Density Test Section

Step 1: From the menubar, select **Functions® Density® Review Density Asphalt Nuclear QA**

The **Review Density Asphalt Nuclear QA** entry window displays.

Step 2: Enter the **Contract.** If the contract you entered is not found in HiCAMS, the **Contract Selection** window will display and you can select a Contract from this window. If you don't know the Contract to begin with, then click on the book icon next to the Contract entry field.

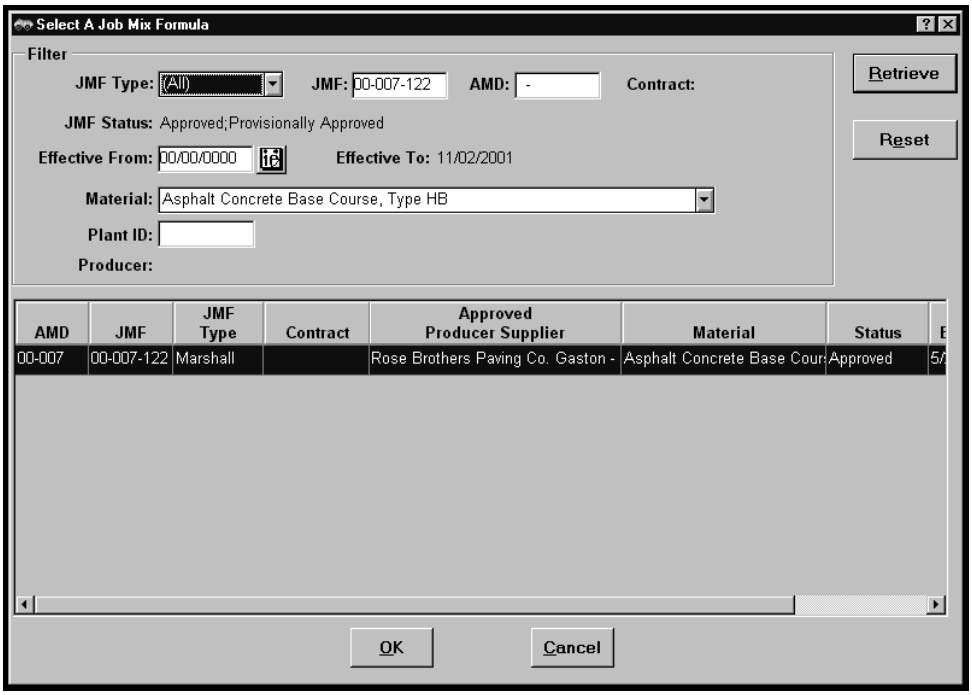
This displays the **Contract Selection** window. From here you can select the Contract you wish to use:



Note: *When the contract is entered, HiCAMS will populate the materials list from the CBOM.*

Step 3: Select the **Material** from the drop down menu.

Step 4: Enter the **JMF.** If the JMF you entered is not found in HiCAMS, the "JMF Selection Window" will be opened and you can select a JMF from this window. If you don't know the JMF to begin with, then click on the button next to the JMF entry field that brings up the "JMF Selection Window". From here you can select the JMF you wish to use:



Step 5: Enter the **Test Section** number**.**

Step 6: Enter the **Test Type.** Enter the type of test for this test section: QA (QA Nuclear Test Section) or QAV (QA Nuclear Verification Test Section).

Step 7: Enter the **Avg. % Comp.**

Step 8: Enter the **NDT Cert.** number.

Note: *Once you select or enter a NDT Certification, HiCAMS will retrieve the technician's name and put it in the NDT Name field at the bottom of the window.*

Pass: This field will be populated by HiCAMS based upon the minimum percent compaction of the JMF selected.

Corr. Accept.: This field will be populated by HiCAMS at the time the record is saved if a matching QC test section is found, *AND if the QC % Compaction falls within 2% (+/-) of the QA % Compaction*. If the correlation falls within this parameter, the field will be populated with "Yes". If it fails to fall within this parameter, the filed will display "No". If none found, will remain blank.

Note: *If a QA/QC correlation fails, a notification will be sent to the appropriate RE and the QA Supervisor.*

Corr. Revwd.: If a correlation is found at the time the test section entered is saved, HiCAMS will check this field. However, the checkbox will remain editable.

Note: *If a matching QC test section cannot be found at the time the QA test section is entered, HiCAMs will perform regular checks for the missing QC data; when found the record will be updated, but the **Corr. Revwd.** checkbox will have to be manually checked.*

Step 9: **Paving Contractor**: Select the appropriate contractor using the **Contractor Selection** window.

Step 10: Enter the **QA Control Strip** number.

Step 11: Enter the **QC Core Sample Avg. %**.

Step 12: Enter the **Avg. of 10 Readings** result.

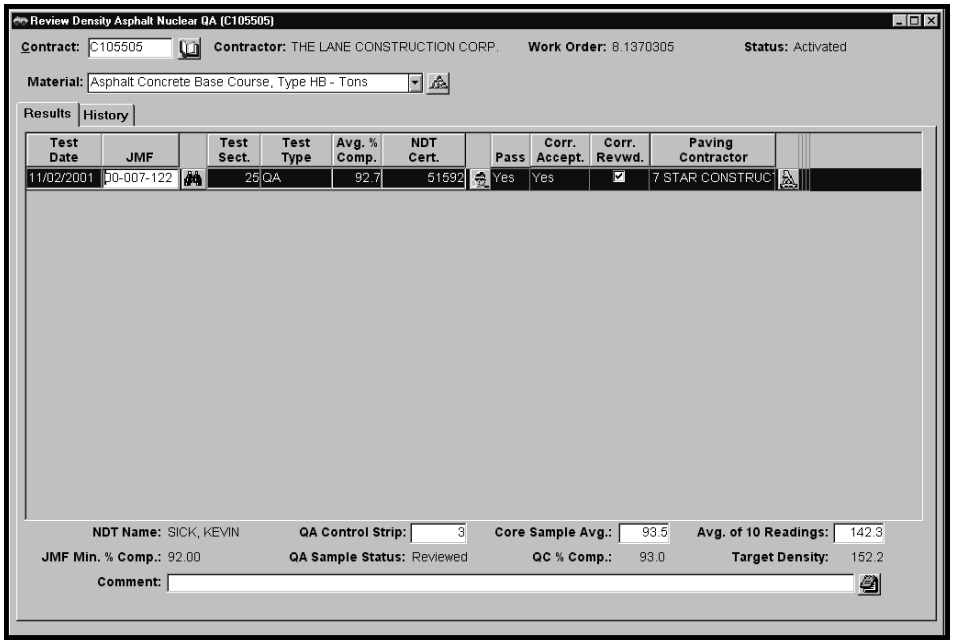
Step 13: Enter any **Comment** that you may have about the QA test section. Do this by clicking on the comment icon  and entering your comment in the window provided.

Step 14: **Save** the data you entered by clicking on the save icon. 

Retrieve/review existing Asphalt Nuclear QA Test Section

Follow **Steps 1-2** in the section above **Enter a QA Asphalt Nuclear Test Section**

Any existing test section for the selected contract, and material will be displayed along with the QA results (and corresponding QC results if the test section was a test type of "QA").



Edit an Existing Asphalt Nuclear QC Lot

Follow **Steps 1-2** in the section above **Enter an existing Asphalt Nuclear QA Test Section.**

Step 3: Place your cursor in the field you wish to modify and make the change.

Step 4: Repeat this for any field on the window you wish to modify.

Step 5: **Save** the data you entered by clicking on the save icon.

Delete an existing Asphalt Nuclear QC Lot Test Section

Follow **Steps 1-2** in the section above **Enter an existing QA Asphalt Nuclear Test Section.**

Step 3: Select the test section to delete and click the "Delete" icon. 

Step 4: You will be asked to confirm the deletion and enter a comment indicating why you are deleting the test section. Once you do this, the test section will be deleted.

Step 5: **Save** the data you entered by clicking on the save icon.